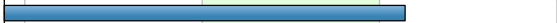


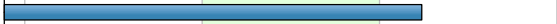








ANALYSIS REPORT

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
		Client Reference:	Dairy Unit	
Phone:	06 378 2116	Submitted By:	S Cohen	

Sample Name: Dairy Unit 63 **Lab Number:** 841272.1
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.4	5.8 - 6.3			
Olsen Phosphorus	mg/L	20	20 - 30			
Potassium	me/100g	0.28	0.50 - 0.80			
Calcium	me/100g	15.1	6.0 - 12.0			
Magnesium	me/100g	1.69	1.00 - 3.00			
Sodium	me/100g	0.16	0.20 - 0.50			
CEC	me/100g	20	12 - 25			
Total Base Saturation	%	84	50 - 85			
Volume Weight	g/mL	0.79	0.60 - 1.00			
Sulphate Sulphur	mg/kg	4	7 - 15			
Base Saturation %		K 1.4 Ca 74 Mg 8.3 Na 0.8				
MAF Units		K 4 Ca 15 Mg 30 Na 6				

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
 The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 115/116 **Lab Number:** 841272.2
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	5.8	5.8 - 6.3	<div style="width: 60%; background-color: #0056b3; height: 10px;"></div>		
Olsen Phosphorus	mg/L	28	20 - 30	<div style="width: 100%; background-color: #0056b3; height: 10px;"></div>		
Potassium	me/100g	0.33	0.50 - 0.80	<div style="width: 30%; background-color: #0056b3; height: 10px;"></div>		
Calcium	me/100g	10.3	6.0 - 12.0	<div style="width: 80%; background-color: #0056b3; height: 10px;"></div>		
Magnesium	me/100g	1.35	1.00 - 3.00	<div style="width: 40%; background-color: #0056b3; height: 10px;"></div>		
Sodium	me/100g	0.13	0.20 - 0.50	<div style="width: 20%; background-color: #0056b3; height: 10px;"></div>		
CEC	me/100g	20	12 - 25	<div style="width: 70%; background-color: #0056b3; height: 10px;"></div>		
Total Base Saturation	%	59	50 - 85	<div style="width: 65%; background-color: #0056b3; height: 10px;"></div>		
Volume Weight	g/mL	0.78	0.60 - 1.00	<div style="width: 75%; background-color: #0056b3; height: 10px;"></div>		
Sulphate Sulphur	mg/kg	3	7 - 15	<div style="width: 10%; background-color: #0056b3; height: 10px;"></div>		
Base Saturation %		K 1.6 Ca 50 Mg 6.6 Na 0.6				
MAF Units		K 5 Ca 10 Mg 24 Na 5				


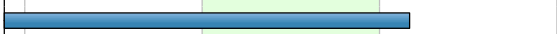

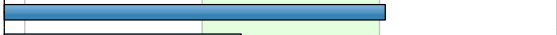






The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
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		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 50 **Lab Number:** 841272.3
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.1	5.8 - 6.3			
Olsen Phosphorus	mg/L	40	20 - 30			
Potassium	me/100g	0.22	0.50 - 0.80			
Calcium	me/100g	12.5	6.0 - 12.0			
Magnesium	me/100g	1.44	1.00 - 3.00			
Sodium	me/100g	0.10	0.20 - 0.50			
CEC	me/100g	19	12 - 25			
Total Base Saturation	%	74	50 - 85			
Volume Weight	g/mL	0.80	0.60 - 1.00			
Sulphate Sulphur	mg/kg	5	7 - 15			
Base Saturation %		K 1.1 Ca 65 Mg 7.5 Na 0.5				
MAF Units		K 4 Ca 12 Mg 26 Na 4				









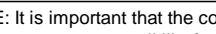

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 14/15 **Lab Number:** 841272.4
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.2	5.8 - 6.3			
Olsen Phosphorus	mg/L	28	20 - 30			
Potassium	me/100g	0.35	0.50 - 0.80			
Calcium	me/100g	12.2	6.0 - 12.0			
Magnesium	me/100g	1.58	1.00 - 3.00			
Sodium	me/100g	0.15	0.20 - 0.50			
CEC	me/100g	17	12 - 25			
Total Base Saturation	%	82	50 - 85			
Volume Weight	g/mL	0.79	0.60 - 1.00			
Sulphate Sulphur	mg/kg	3	7 - 15			
Base Saturation %		K 2.0 Ca 70 Mg 9.1 Na 0.8				
MAF Units		K 6 Ca 12 Mg 28 Na 5				

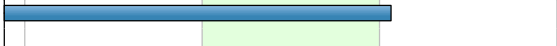
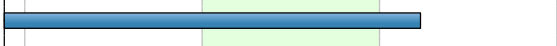

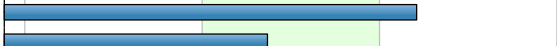






The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
		Client Reference:	Dairy Unit	
Phone:	06 378 2116	Submitted By:	S Cohen	

Sample Name: Dairy Unit 32 **Lab Number:** 841272.5
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.4	5.8 - 6.3			
Olsen Phosphorus	mg/L	44	20 - 30			
Potassium	me/100g	0.44	0.50 - 0.80			
Calcium	me/100g	14.8	6.0 - 12.0			
Magnesium	me/100g	1.73	1.00 - 3.00			
Sodium	me/100g	0.15	0.20 - 0.50			
CEC	me/100g	20	12 - 25			
Total Base Saturation	%	84	50 - 85			
Volume Weight	g/mL	0.75	0.60 - 1.00			
Sulphate Sulphur	mg/kg	4	7 - 15			
Base Saturation %	K 2.1 Ca 72 Mg 8.5 Na 0.7					
MAF Units	K 7 Ca 14 Mg 29 Na 5					

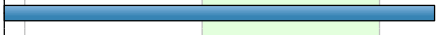
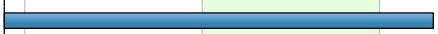

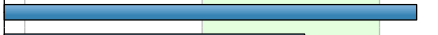
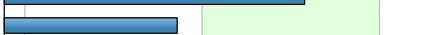
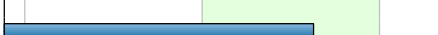
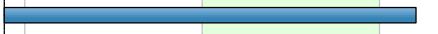
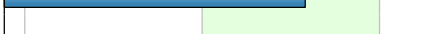
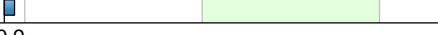

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 40 **Lab Number:** 841272.6
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.6	5.8 - 6.3			
Olsen Phosphorus	mg/L	48	20 - 30			
Potassium	me/100g	0.71	0.50 - 0.80			
Calcium	me/100g	14.7	6.0 - 12.0			
Magnesium	me/100g	2.16	1.00 - 3.00			
Sodium	me/100g	0.17	0.20 - 0.50			
CEC	me/100g	20	12 - 25			
Total Base Saturation	%	88	50 - 85			
Volume Weight	g/mL	0.83	0.60 - 1.00			
Sulphate Sulphur	mg/kg	2	7 - 15			
Base Saturation %		K 3.5	Ca 73	Mg 10.7	Na 0.9	
MAF Units		K 12	Ca 15	Mg 40	Na 7	

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
Address:	Cornwall Road RD 7 MASTERTON 5887	Date Registered:	30-Oct-2010	
		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
		Client Reference:	Dairy Unit	
Phone:	06 378 2116	Submitted By:	S Cohen	

Sample Name: Dairy Unit 47/48 **Lab Number:** 841272.7
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.5	5.8 - 6.3			
Olsen Phosphorus	mg/L	31	20 - 30			
Potassium	me/100g	0.21	0.50 - 0.80			
Calcium	me/100g	10.4	6.0 - 12.0			
Magnesium	me/100g	1.03	1.00 - 3.00			
Sodium	me/100g	0.10	0.20 - 0.50			
CEC	me/100g	14	12 - 25			
Total Base Saturation	%	81	50 - 85			
Volume Weight	g/mL	0.90	0.60 - 1.00			
Sulphate Sulphur	mg/kg	1	7 - 15			
Base Saturation %		K 1.5 Ca 72 Mg 7.1 Na 0.7				
MAF Units		K 4 Ca 12 Mg 21 Na 4				

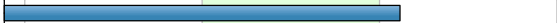


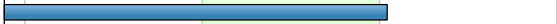






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Client:	Taratahi Agricultural Training Centre	Lab No:	841272	shpv1
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		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 64/65 **Lab Number:** 841272.8
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.4	5.8 - 6.3			
Olsen Phosphorus	mg/L	24	20 - 30			
Potassium	me/100g	0.25	0.50 - 0.80			
Calcium	me/100g	12.6	6.0 - 12.0			
Magnesium	me/100g	1.55	1.00 - 3.00			
Sodium	me/100g	0.14	0.20 - 0.50			
CEC	me/100g	18	12 - 25			
Total Base Saturation	%	79	50 - 85			
Volume Weight	g/mL	0.76	0.60 - 1.00			
Sulphate Sulphur	mg/kg	5	7 - 15			
Base Saturation %		K 1.4 Ca 68 Mg 8.4 Na 0.7				
MAF Units		K 4 Ca 12 Mg 27 Na 5				

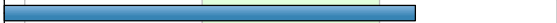


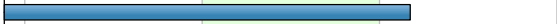



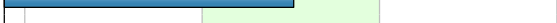


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		Date Reported:	03-Nov-2010	
		Quote No:		
		Order No:	C351014340	
Phone:	06 378 2116	Client Reference:	Dairy Unit	
		Submitted By:	S Cohen	

Sample Name: Dairy Unit 110 **Lab Number:** 841272.9
Sample Type: SOIL Mixed Pasture (S1)

Analysis	Level Found	Medium Range	Low	Medium	High	
pH	pH Units	6.5	5.8 - 6.3			
Olsen Phosphorus	mg/L	32	20 - 30			
Potassium	me/100g	0.21	0.50 - 0.80			
Calcium	me/100g	14.3	6.0 - 12.0			
Magnesium	me/100g	1.30	1.00 - 3.00			
Sodium	me/100g	0.15	0.20 - 0.50			
CEC	me/100g	20	12 - 25			
Total Base Saturation	%	79	50 - 85			
Volume Weight	g/mL	0.81	0.60 - 1.00			
Sulphate Sulphur	mg/kg	4	7 - 15			
Base Saturation %		K 1.0 Ca 70 Mg 6.4 Na 0.8				
MAF Units		K 3 Ca 14 Mg 24 Na 6				

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

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		Quote No:		
		Order No:	C351014340	
		Client Reference:	Dairy Unit	
Phone:	06 378 2116	Submitted By:	S Cohen	

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Samples
Sample Registration*	Samples were registered according to instructions received.	-	1-9
Soil Prep (Dry & Grind)*	Air dried at 35 - 40°C overnight (residual moisture typically 4%) and crushed to pass through a 2mm screen.	-	1-9
pH	1:2 (v/v) soil:water slurry followed by potentiometric determination of pH.	0.1 pH Units	1-9
Olsen Phosphorus	Olsen extraction followed by Molybdenum Blue colorimetry.	1 mg/L	1-9
Sulphate Sulphur	0.02M Potassium phosphate extraction followed by Ion Chromatography.	1 mg/kg	1-9
Potassium (MAF)	1M Neutral ammonium acetate extraction followed by ICP-OES.	2 MAF units	1-9
Calcium (MAF)	1M Neutral ammonium acetate extraction followed by ICP-OES.	2 MAF units	1-9
Magnesium (MAF)	1M Neutral ammonium acetate extraction followed by ICP-OES.	2 MAF units	1-9
Sodium (MAF)	1M Neutral ammonium acetate extraction followed by ICP-OES.	2 MAF units	1-9
Potassium	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.01 me/100g	1-9
Calcium	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.5 me/100g	1-9
Magnesium	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.04 me/100g	1-9
Sodium	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.05 me/100g	1-9
Potassium (Sat)	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.1 %BS	1-9
Calcium (Sat)	1M Neutral ammonium acetate extraction followed by ICP-OES.	1 %BS	1-9
Magnesium (Sat)	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.2 %BS	1-9
Sodium (Sat)	1M Neutral ammonium acetate extraction followed by ICP-OES.	0.1 %BS	1-9
CEC	Summation of extractable cations (K, Ca, Mg, Na) and extractable acidity.	2 me/100g	1-9
Total Base Saturation	Calculated from Extractable Cations and Cation Exchange Capacity.	5 %	1-9
Volume Weight	The weight/volume ratio of dried, ground soil.	0.01 g/mL	1-9

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Wendy Homewood
Quality Assurance Officer - Agriculture Division